Conclusions: The ALTEP facilitated functional recovery and HRQoL. Together with pharmacologic treatment, clients may obtain optimum control in vascular risk factors like blood pressure, lipid and glucose, which may to lower stroke recurrent rate. The interpretation of results warrants caution, however, due to the lack of a control group.

doi:10.1016/j.hkpj.2011.08.019

A Randomized Controlled Trial to Investigate the Feasibility and Clinical Efficacy of Whole Body Vibration Therapy in Modifying Bone Metabolism and Neuromotor Performance in Individuals with Chronic Stroke

R. W. K. Lau, MSc [a], S. P. Yip, PhD [b], M. Y. C. Pang, PhD [c]
[a]Department of Rehabilitation Sciences, The Hong Kong Polytechnic University, Hong Kong
[b]Department of Health Technology and Informatics, The Hong Kong Polytechnic University, Hong Kong
[c]Department of Rehabilitation Sciences, The Hong Kong Polytechnic University, Hong Kong

Background and Purpose: Whole body vibration (WBV) has gained increasing popularity in rehabilitation of various patient populations. The aim of this study was to examine the feasibility and clinical efficacy of whole body vibration therapy in enhancing bone health and neuromotor performance in individuals with chronic stroke.
Methods: 82 patients with chronic stroke were randomized into either the WBV group or control group. Subjects in the WBV group received WBV stimulation (20-30Hz, 1.2-1.87mm, 1.93-6.77g) while performing six different sets of dynamic leg exercises. The total WBV exposure was 10-15 minutes per session. Subjects in control group, in contrast, performed the same dynamic leg exercises but without any added vibration stimuli. In each of the treatment arms, the subjects underwent their respective training three times per week for 8 weeks (i.e., 24 sessions). Outcome variables included the serum bone turnover markers, isometric and dynamic knee muscles strength, Berg Balance Scale, Limits of Stability Test, Activities-Specific Balance Confidence Scale, Six-Minute Walk Test, and Ten-Meter Walk Test. The measurement of outcomes was performed immediately before training, immediately after training, and at 1 month after the termination of training. Additionally, the Visual Analog Scale was used by the subjects to rate their level of satisfaction with the WBV program. Multivariate analysis of variance (MANOVA) was used to determine whether WBV had any significant overall treatment effect. Post-hoc contrast analysis was performed when appropriate.
Results: Intention-to-treat analysis showed that there were significant but similar improvements in most outcomes in both groups, and the improvements were maintained in 1-month follow-up. The only exception was the serum level of bone turnover markers, which demonstrated no significant change over time in both groups. Three people in each group dropped out from the trial, yielding a low attrition rate of 7%. The subjects in the WBV group showed high satisfaction level with the program (mean score: 9.0±1.0), which was significantly different from the control group (mean score: 8.4±1.5) ($p=0.031$).
Conclusion: WBV training is safe and feasible in individuals with chronic stroke. However, the results showed that WBV stimulation has no additional effect on improving bone turnover rate, knee muscles strength, mobility, and balance compared with dynamic leg exercises alone in patients with chronic stroke.

doi:10.1016/j.hkpj.2011.08.020

To Study the Efficacy of Acupuncture in Improving Functional Mobility in Acute Stroke — A Randomized, Controlled and Single Blinded Study

H. S. F. Yip, MSc
Caritas Medical Centre, Hong Kong

Background and Purpose: The global burden caused by stroke is coming more and more severe. Good and early recovery can minimize post-stroke disability and dependency. This study was designed to investigate the efficacy of acupuncture in improving functional mobility in acute stroke.
Methods: A randomized controlled trial (RCT) was performed in the acute stroke unit (ASU) and rehabilitation wards in a Hong Kong hospital. 120 acute stroke patients were randomly selected into acupuncture group and control group, each 60 patients. Acupuncture group patients received acupuncture treatment (once a day, 5 days in a week and totally 3 weeks) on top of the conventional treatment in the stroke pathway (from acute to rehabilitation period). Control group patients received the conventional treatment throughout the stroke pathway only. Modified Rivermead Mobility Index (MRMI), Modified Functional Ambulation Category (MFAC) and Modified Barthel Index (MBI) were used to assess the functional outcomes. Experienced physiotherapists and occupational therapists, who were blinded to the patients' allocation, evaluated the outcomes at before and after intervention, also at predischarge.
Results: There were statistically significant differences before and after intervention in both acupuncture group and control group but no significant differences were found between the two groups. Clinically, 29% of acupuncture group patients gained the second highest level "indoor walker" of MFAC whilst only 7% in control group at the predischarge status. Moreover, in the postdischarge phone visit, a higher proportion of patients in the acupuncture group were able to return home living and achieve outdoor walk independently at 6 months after discharge compared with those of control group (69% and 43% versus 55% and 28% respectively).
Conclusion: Adding acupuncture to conventional treatment may have some benefit on improving mobility in acute stroke patients compared with conventional treatment only, but more study is required.

doi:10.1016/j.hkpj.2011.08.021

Spinal Movement Coordination and Muscular Activity in Adults with Chronic Mechanical Neck Pain

S. M. H. Tsang, MMani Th [a], G. P. Y. Szeto, PhD [b], R. Y. W. Lee, PhD [c]
[a]Department of Rehabilitation Sciences, The Hong Kong Polytechnic University, Hong Kong
[b]Department of Rehabilitation Sciences, The Hong Kong Polytechnic University, Hong Kong
[c]Department of Life Sciences, Roehampton University, London, United Kingdom

Background and Purpose: Comprehensive analysis of movement coordination of the cervico-thoracic spine in people with neck pain was limited in previous studies. The purposes of this study were: (1) to examine the spinal kinematics of the cervical and upper thoracic regions and the associated electromyographic activities (EMG) in people with chronic mechanical neck pain (CMNP) during active neck movements and (2) to compare the movement coordination and EMG patterns with the healthy adults.
Methods: 10 adults (8 females and 2 males) with CMNP and 10 age and gender matched control adults participated in this study. Spinal kinematics and EMG activities of 5 pairs of cervicothoracic muscles were assessed by the three dimensional electromagnetic motion tracking device and EMG system respectively while subjects performed self paced active neck movements in sitting. Coefficient of Cross Correlations (CCC) between spinal regions and EMG were compared between two groups with the analysis of variance (ANOVA).
Results: The results demonstrated significant reduction in spinal movement and alteration in EMG coordination in CMNP group in performing free paced neck movement task, as revealed by the CCC ($F_{1,18}=4.754$, $p=0.04$) for cervical and upper thoracic spinal kinematics and CCC ($F_{1,18}=5.083$, $p=0.04$) for cervical kinematics and EMG activity.
Conclusion: Aberrant coordination in the cervicothoracic spine and altered EMG activation pattern were found in people with chronic neck pain compared to healthy individuals. Cross correlation method provides a comprehensive analysis of coordination of movement across various spinal regions and the associated muscle activity in dynamic movement task.

doi:10.1016/j.hkpj.2011.08.022

Neck and Upper Limb Muscle Activity During Electronic Game Playing in School Children

D. P. Y. Lui, MSc [a], G. P. Y. Szeto, PhD [b], A. Y. M. Jones, PhD [c]
[a]Department of Rehabilitation Sciences, The Hong Kong Polytechnic University, Hong Kong
[b]Department of Rehabilitation Sciences, The Hong Kong Polytechnic University, Hong Kong
[c]Department of Rehabilitation Sciences, The Hong Kong Polytechnic University, Hong Kong

Background and Purpose: Electronic game (EG) playing has become very popular among youngsters, and nowadays, many different game devices are played by school children. Use of these game devices (such as small-screen handheld and active) may affect the postures and muscular loading,